

1. Introduction

An apparatus for sorting products moving through a detection zone directs a light beam having a given cross sectional area towards a scanning zone through which the products move and are impinged upon by the light beam. A first detector is disposed to receive reflected light back from the products and has a first field of view larger than the light beam cross sectional area, the first detector being sensitive to substantially all of the direct and diffused reflected light from the products and generating a first signal corresponding thereto. A second detector also receives the reflected light and has a second field of view generally equal to the cross sectional area of the light beam. The second detector is sensitive to substantially only the direct reflected light from the products and generates a second signal corresponding thereto. Control circuitry causes a removal mechanism to remove impurities or irregular products from the stream of products based on the signals from the first and second detectors individually or a difference between the signals.